

IN THE CLAIMS

Please add the following claims:

81
1 85. A microcapsule consisting of two to four internal, immiscible liquid phases enclosed
2 within a polymer outer membrane having a melting temperature, an energy absorbing component
3 selected from the group consisting of amorphous carbon, graphite, aluminum power, acetylene
4 black, sodium amyl alcohol, sorbitan monooleate, 2% sorbitan monooleate/20 moles ethylene
5 oxide, and paraffin oil, and a drug or drug precursor, in an internal liquid phase in contact with
6 the outer membrane, said energy absorbing component having a higher specific absorption rate
7 for magnetic, radiofrequency, microwave, or ultrasound energy than the specific absorption rate
8 of the polymer membrane, wherein the temperature of said energy absorbing component is
9 increased by absorbing said energy to melt at least a portion of the poly membrane.

1 86. A microcapsule consisting of two to four internal, immiscible liquid phases enclosed
2 within a polymer outer membrane having a melting temperature, an energy absorbing
3 components selected from the group consisting of amorphous carbon, graphite, aluminum power,
4 acetylene black, sodium amyl alcohol, sorbitan monooleate, 2% sorbitan monooleate/20 moles
5 ethylene oxide, and paraffin oil, and a drug precursor in a first internal liquid phase and an
6 activator of said drug precursor in a second internal liquid phase immiscible with the first
7 internal liquid, one of said internal liquid phases in contact with the outer membrane, said energy
8 absorbing component having a higher specific absorption rate for magnetic, radiofrequency,
9 microwave, or ultrasound energy than the specific absorption rate of the polymer membrane,
10 wherein the temperature of said energy absorbing component is increased by absorbing said
11 energy to melt at least a portion of the poly membrane.

1 87. A composition consisting of microcapsules, wherein said microcapsules consist of two to
2 four internal, immiscible liquid phases enclosed within a polymer outer membrane having a
3 melting temperature, and a magnetic particle selected from the group consisting of oxides of

4 iron, nickel copper, gold, silver, and zinc, in an internal liquid phase in contact with the outer
5 membrane, wherein the magnetic particle has a Curie point higher than the melting temperature
6 of the polymer membrane; and further wherein a first portion of said microcapsules contain
7 magnetic particles with a first Curie point, and a second portion of said microcapsules contain
8 magnetic particles with a second Curie point, and further wherein the first Curie point is different
9 than said second Curie point; and wherein at least certain of the microcapsules contain a drug in
10 said first or second portion or both.

81
61
Cont
1 88. A method of controlling the release of a drug consisting of:

2 providing a drug delivery solution consisting of microcapsules consisting of two to four
3 internal, immiscible liquid phases enclosed within a polymer outer membrane having a melting
4 temperature, and an energy absorbing component selected from the group consisting of
5 amorphous carbon, graphite, aluminum powder, acetylene black, sodium amyl alcohol, sorbitan
6 monooleate, 2% sorbitan monooleate/20 moles ethylene oxide, and paraffin oil, in an internal
7 liquid phase in contact with the outer membrane, wherein the energy absorbing component has a
8 higher specific absorption rate for electromagnetic, radiofrequency, microwave, or ultrasound
9 energy than the specific absorption rate of the polymer membrane, and a drug contained in at
10 least one of the internal liquid phases;

11 administering the drug delivery solution to a subject; and

12 exposing the microcapsule to an energy source, effective to heat the energy absorbing
13 component and to melt at least a portion of the polymer outer membrane and to release the drug.

1 89. A method of controlling the release of a drug consisting of:

2 providing a drug delivery solution consisting of microcapsules consisting of two to four
3 internal, immiscible liquid phases enclosed within a polymer outer membrane having a melting
4 temperature, and an energy absorbing component in an internal liquid phase in contact with the
5 outer membrane, wherein the energy absorbing component is a magnetic particle and the energy
6 is a magnetic field, wherein the energy absorbing component has a higher specific absorption

7 rate for electromagnetic energy than the specific absorption rate of the polymer membrane, and a
8 drug contained in at least one of the internal liquid phases, wherein the microcapsules contain a
9 drug precursor in a first internal liquid phase and an activator of the drug precursor in a second
10 internal liquid phase immiscible with the first internal liquid phase;

11 exposing the microcapsules to an energy source effective to mix the immiscible internal
12 liquid phases and increase the kinetics of activation of the drug precursor prior to heating the
13 magnetic particles;

14 administering the drug delivery solution to a subject; and

15 exposing the microcapsule to an energy source, effective to heat the energy absorbing
16 component and to melt at least a portion of the polymer outer membrane and to release the drug.

90. A method of controlling the release of a drug consisting of:

1 providing a drug delivery solution consisting of microcapsules consisting of two to four
2 internal, immiscible liquid phases enclosed within a polymer outer membrane having a melting
3 temperature, and an energy absorbing component in an internal liquid phase in contact with the
4 outer membrane, wherein the energy absorbing component is a magnetic particle and the energy
5 is a magnetic field, wherein the energy absorbing component has a higher specific absorption
6 rate for electromagnetic energy than the specific absorption rate of the polymer membrane, and a
7 drug contained in at least one of the internal liquid phases;

8 administering the drug delivery solution to a subject; and

9 exposing the microcapsule to an energy source, effective to heat the energy absorbing
10 component and to melt at least a portion of the polymer outer membrane and to release the drug.

91. A method of controlling the release of a drug consisting of:

6
6
4
Cont

2 providing a drug delivery solution consisting of microcapsules consisting of two to four
3 internal, immiscible liquid phases enclosed within a polymer outer membrane having a melting
4 temperature, and an energy absorbing component in an internal liquid phase in contact with the
5 outer membrane, wherein the energy absorbing component consists of a spheroid within the
6 microcapsule, and wherein the energy is ultrasound, wherein the energy absorbing component
7 has a higher specific absorption rate for ultrasound energy than the specific absorption rate of the
8 polymer membrane, and a drug contained in at least one of the internal liquid phases;
9 administering the drug delivery solution to a subject; and
10 exposing the microcapsule to an energy source, effective to heat the energy absorbing
11 component and to melt at least a portion of the polymer outer membrane and to release the drug.

1
1 92. A method of controlling the release of a drug consisting of:

2 providing a drug delivery solution consisting of microcapsules consisting of two to four
3 internal, immiscible liquid phases enclosed within a polymer outer membrane having a melting
4 temperature, and an energy absorbing component selected from the group consisting of
5 amorphous carbon, graphite, aluminum powder, acetylene black, sodium amyl alcohol, sorbitan
6 monooleate, 2% sorbitan monooleate/20 moles ethylene oxide, and paraffin oil, in an internal
7 liquid phase in contact with the outer membrane, wherein the energy absorbing component has a
8 higher specific absorption rate for electromagnetic, radiofrequency, microwave, or ultrasound
9 energy than the specific absorption rate of the polymer membrane, and a drug contained in at
10 least one of the internal liquid phases, and wherein the microcapsules contain a radiocontrast

11 medium;
12 wherein the microcapsules are administered to a subject intraarterially, intravenously,
13 intraperitoneally, directly into a tissue, or directly into a tumor;
14 administering the drug delivery solution to a subject;
15 detecting said microcapsules at a target site by radiography, prior to heating the energy
16 absorbing component; and
17 exposing the microcapsule to an energy source, effective to heat the energy absorbing
18 component and to melt at least a portion of the polymer outer membrane and to release the drug.
